Ramón Gabriel Plaza Villegas

CONTACT

Departamento de Matemáticas y Mecánica
Instituto de Investigaciones en Matemáticas Aplicadas y en Sistemas
Universidad Nacional Autónoma de México
Circuito Escolar s/n, Ciudad Universitaria
C.P. 04510, Ciudad de México
Mexico
Tel.: +52 (55) 5622-3561
Fax: +52 (55) 5622-3564
E-mail: plaza@aries.iimas.unam.mx

EDUCATION

Courant Institute of Mathematical Sciences, New York University
Ph. D. in Mathematics, 2003.
Thesis: *On the stability of shock profiles*.
Advisor: Prof. Jonathan Goodman

Courant Institute of Mathematical Sciences, New York University
M. Sc. in Mathematics, 1998.

School of Sciences, National University of México (UNAM)
B. Sc. in Mathematics, 1996. *Summa cum laude.*
Thesis: *A free boundary value problem for the Navier-Stokes equations.* (in Spanish).
Facultad de Ciencias, UNAM, 1996.
Advisor: Prof. Jorge Ize.

WORK EXPERIENCE

Institute of Applied Mathematics and Systems, National University of Mexico (UNAM)
Professor (tenured).
June 2020 - present

Institute of Applied Mathematics and Systems, National University of Mexico (UNAM)
Associate Professor (tenured).
November 2013 - June 2020.

Institute of Applied Mathematics and Systems, National University of Mexico (UNAM)
Associate Professor (not tenured).
March 2012 - October 2013

Institute of Applied Mathematics and Systems, National University of Mexico (UNAM)
Assistant Professor.
March 2007 - February 2012

Mathematics Institute, University of Leipzig, Germany.
Research assistant.
September 2005 - February 2007

Max-Planck-Institute for Mathematics in the Sciences, Leipzig, Germany.
Post-doctoral associate.
September 2003 - August 2005

Fordham University, New York
Adjunct professor.
September 2002 - January 2003

WORK EXPERIENCE (CONTINUED)

New York University
Instructor.
September 2001 - June 2003

AWARDS

Institute of Physics, United Kingdom. Certificate as Trusted Reviewer
In recognition of an exceptionally high level of peer review competency
March 2022.

Springer Nature Award for Editorial Excellence
In recognition of his perfromance as Editor-in-Chief of the Boletín de la Sociedad Matemática Mexicana (Springer-Verlag).
September 2020.

Member of the National Researchers Network (SNI), CONAHCyT, México.
Level III. January 2024 - present

Member of the National Researchers Network (SNI), CONACyT, México.
Level II. January 2015 - December 2023

Member of the National Researchers Network (SNI), CONACyT, México.
Level I. January 2008 - December 2014

Fellowship for Doctoral Studies.
National University of México (DGAPA/UNAM).
September 1996 - August 2002.

Research Grant (Ph.D. research).
National Agency for Education (SEP), México.
September 1998 - August 2001.

Honors B.Sc. in Mathematics (Summa cum laude).
School of Sciences, UNAM, México, 1996.

Supercomputing Fellowship, Cray Research Inc.
September 1993 - August 1994.

Gabino Barreda Medal.
National University of México (UNAM), July 1991.

RESEARCH INTERESTS

Stability of Traveling Waves, Continuum Mechanics, Mathematical Modelling in Biology, Partial and Ordinary Differential Equations, Numerical Analysis, Applied Analysis.

PUBLICATIONS

1. A. CAPELLA, C. MELCHER, L. MORALES, R. G. PLAZA, *Nonlinear stability of static Néel walls in ferromagnetic thin films*. Arch. Ration. Mech. Anal. **248** (2024), no. 119, 1–47. https://doi.org/10.1007/s00205-024-02074-9
2. R. G. PLAZA, D. ZHELYAZOV, *Well-posedness and decay structure of a quantum hydrodynamics system with linear viscosity*. J. Math. Phys. **65** (2024), no. 8, 081508, 1–35. https://doi.org/10.1063/5.0172774
3. R. FOLINO, A. NAUMKINA, R. G. PLAZA, *Instability of periodic wavetrains for the Korteweg-de Vries-Burgers equation with monostable source*. Phys. D **467** (2024), 134234, 1-10. https://doi.org/10.1016/j.physd.2024.134234
4. E. ÁLVAREZ, J. ANGULO PAVA, R. G. PLAZA, *Orbital instability of periodic waves for scalar viscous balance laws*. J. Evol. Equ. **24** (2024), art. no. 7, 1-35. https://doi.org/10.1007/s00028-023-00936-5

PUBLICATIONS (CONTINUED)

5. R. FOLINO, R. G. PLAZA, D. ZHELYAZOV, *Spectral stability of weak dispersive shock profiles in a quantum hydrodynamics system with nonlinear viscosity*. J. Differ. Equ. **359** (2023), 330–364. https://doi.org/10.1016/j.jde.2023.02.038
6. J. F. LEYVA, L. F. LÓPEZ RÍOS, R. G. PLAZA, *Spectral stability of monotone traveling fronts for reaction diffusion-degenerate Nagumo equations*. Indiana Univ. Math. J. **71** (2022), no. 6, 2335-2376. https://doi.org/10.1512/iumj.2022.71.9099
7. R. FOLINO, R. G. PLAZA, D. ZHELYAZOV, *Spectral stability of small-amplitude dispersive shocks in a quantum hydrodynamics system with viscosity*. Comm. Pure Appl. Anal. **21** (2022), no. 12, 4019-4040. https://doi.org/10.3934/cpaa.2022133
8. E. ÁLVAREZ, R. MURILLO, R. G. PLAZA, *Spectral instability of small-amplitude periodic waves for hyperbolic non-Fickian diffusion advection models with logistic source*. Math. Model. Nat. Phenom. **17** (2022), art. no. 13, 1–25. https://doi.org/10.1051/mmnp/2022020
9. R. G. PLAZA, J. M. VALDOVINOS, *Dissipative structure of one-dimensional isothermal compressible fluids of Korteweg type*. J. Math. Anal. Appl. **514** (2022), no. 2, p. 126336. https://doi.org/10.1016/j.jmaa.2022.126336
10. R. FOLINO, L. F. LÓPEZ RÍOS, R. G. PLAZA, *Long-time behavior of solutions to the generalized Allen-Cahn model with degenerate diffusivity*. Nonlinear Differ. Equ. Appl. **29** (2022), art. no. 45, 1–38. https://doi.org/10.1007/s00030-022-00779-y
11. R. G. PLAZA, F. VALLEJO, *Stability of classical shock fronts for compressible hyperelastic materials of Hadamard type*. Arch. Ration. Mech. Anal. **243** (2022), no. 2, 943–1017. https://doi.org/10.1007/s00205-021-01751-3
12. J. ANGULO PAVA, R. G. PLAZA, *Unstable kink and anti-kink profile for the sine-Gordon equation on a $\mathscr{Y}$-junction graph*. Math. Z. **300** (2022), no. 3, 2885–2915. https://doi.org/10.1007/s00209-021-02899-0
13. J. ANGULO PAVA, R. G. PLAZA, *Instability theory of kink and anti-kink profiles for the sine-Gordon equation on Josephson tricrystal boundaries*. Phys. D **427** (2021), 133020, 1–12. https://doi.org/10.1016/j.physd.2021.133020
14. E. ÁLVAREZ, R. G. PLAZA, *Existence and spectral instability of bounded spatially periodic traveling waves for scalar viscous balance laws*. Quart. Appl. Math. **79** (2021), no. 3, 493–544. https://doi.org/10.1090/qam/1591
15. J. ANGULO PAVA, R. G. PLAZA, *Instability of static solutions of the sine-Gordon equation on a $\mathscr{Y}$-junction graph with δ-interaction*. J. Nonlinear Sci. **31** (2021), no. 3, art. 50, 1-32. https://doi.org/10.1007/s00332-021-09711-7
16. R. FOLINO, R. G. PLAZA, M. STRANI, *Long time dynamics of solutions to p-Laplacian diffusion problems with bistable reaction terms*. Discrete Contin. Dyn. Syst. **41** (2021), no. 7, 3211–3240. https://doi.org/10.3934/dcds.2020403
17. R. FOLINO, R. G. PLAZA, M. STRANI, *Metastable patterns for a reaction-diffusion model with mean curvature-type diffusion*. J. Math. Anal. Appl. **493** (2021), no. 1, p. 124455. https://doi.org/10.1016/j.jmaa.2020.124455
18. R. FOLINO, C. A. HERNÁNDEZ MELO, L. F. LÓPEZ RÍOS, R. G. PLAZA, *Exponentially slow motion of interface layers for the one-dimensional Allen-Cahn equation with nonlinear phase-dependent diffusivity*. Z. Angew. Math. Phys. **71** (2020), no. 4, pp. 132, 1–25. https://doi.org/10.1007/s00033-020-01362-0
19. F. ANGELES, C. MÁLAGA, R. G. PLAZA, *Strict dissipativity of Cattaneo-Christov systems for compressible fluid flow*. J. Phys. A **53** (2020), no. 6, pp. 065701. https://doi.org/10.1088/1751-8121/ab61cc
20. J. F. LEYVA, R. G. PLAZA, *Spectral stability of traveling fronts for reaction diffusion-degenerate Fisher-KPP equations*. J. Dyn. Diff. Equat. **32** (2020), no. 3, pp. 1311-1342. https://doi.org/10.1007/s10884-019-09772-z
21. J. ANGULO PAVA, C. A. HERNÁNDEZ MELO, R. G. PLAZA, *Orbital stability of standing waves for the nonlinear Schrödinger equation with attractive delta potential and double power repulsive nonlinearity*. J. Math. Phys. **60** (2019), no. 7, 071501, pp. 23. https://doi.org/10.1063/1.5097417

PUBLICATIONS (CONTINUED)

22. D. PERA, C. MÁLAGA, C. SIMEONI, R. G. PLAZA, *On the efficient numerical simulation of heterogeneous anisotropic diffusion models of tumor invasion using GPUs*. Rend. Mat. Appl. **40** (2019), no. 3-4, 233-255. http://www1.mat.uniroma1.it/ricerca/rendiconti/40_3-4_(2019)_233-255.html
23. R. G. PLAZA, *Derivation of a bacterial nutrient-taxis system with doubly degenerate cross-diffusion as the parabolic limit of a velocity-jump process*. J. Math. Biol. **78** (2019), no. 6, 1681-1711. https://doi.org/10.1007/s00285-018-1323-x
24. I. PADILLA, R. G. PLAZA, *On the role of cancer cells' diffusion in the tumor growth paradox*. Rend. Mat. Appl. **40** (2019), no. 3-4, 217-231. http://www1.mat.uniroma1.it/ricerca/rendiconti/40_3-4_(2019)_217-231.html
25. C. LATTANZIO, C. MASCIA, R. G. PLAZA, C. SIMEONI, *Kinetic schemes for assessing stability of traveling fronts for the Allen-Cahn equation with relaxation*. Appl. Numer. Math. **141** (2019), 234-247. https://doi.org/10.1016/j.apnum.2018.10.009
26. J. A. BUTANDA, C. MÁLAGA, R. G. PLAZA, *On the stabilizing effect of chemotaxis on bacterial aggregation patterns*. Appl. Math. Nonlinear Sci. **2** (2017), no. 1, 157-172. https://doi.org/10.21042/AMNS.2017.1.00013
27. J. ANGULO PAVA, R. G. PLAZA, *Transverse orbital stability of periodic traveling waves for nonlinear Klein-Gordon equations*. Stud. Appl. Math. **137** (2016), no. 4, 473-501. https://doi.org/10.1111/sapm.12131
28. C. LATTANZIO, C. MASCIA, R. G. PLAZA, C. SIMEONI, *Analytical and numerical investigation of traveling waves for an Allen-Cahn model with relaxation*, Math. Models Methods Appl. Sci. **26** (2016), no. 5, 931-985. https://doi.org/10.1142/S0218202516500226
29. C. K. R. T. JONES, R. MARANGELL, P. D. MILLER, R. G. PLAZA, *Spectral and modulational stability of periodic wavetrains for the nonlinear Klein-Gordon equation,* J. Differ. Equ. **257** (2014), no. 12, 4632-4703. https://doi.org/10.1016/j.jde.2014.09.004
30. J. F. LEYVA, C. MÁLAGA, R. G. PLAZA, *The effects of nutrient chemotaxis on bacterial aggregation patterns with non-linear degenerate cross diffusion,* Phys. A **392** (2013), no. 22, 5644-5662. https://doi.org/10.1016/j.physa.2013.07.022
31. C. K. R. T. JONES, R. MARANGELL, P. D. MILLER, R. G. PLAZA, *On the stability of periodic traveling sine-Gordon waves*. Phys. D **251** (2013), no. 1, 63-74. https://doi.org/10.1016/j.physd.2013.02.003
32. C. MÁLAGA, A. A. MINZONI, R. G. PLAZA, C. SIMEONI, *A chemotactic model for interaction of antagonistic microflora colonies: front asymptotics and numerical simulations*. Stud. Appl. Math. **130** (2013), no. 3, 264-294. https://doi.org/10.1111/sapm.12000
33. R. G. PLAZA, *L^p-decay rates for perturbations of degenerate scalar viscous shock waves.* J. Math. Anal. Appl. **382** (2011), no. 2, 864-882. https://doi.org/10.1016/j.jmaa.2011.04.091
34. T. NGUYEN, R. G. PLAZA, K. ZUMBRUN, *Stability of radiative shock profiles for hyperbolic-elliptic coupled systems.* Phys. D **239** (2010), no. 8, 428-453. https://doi.org/10.1016/j.physd.2010.01.011
35. C. LATTANZIO, C. MASCIA, T. NGUYEN, R. G. PLAZA, K. ZUMBRUN, *Stability of scalar radiative shock profiles.* SIAM J. Math. Anal. **41** (2009), no. 6, 2165-2206. https://doi.org/10.1137/09076026X
36. G. FLORES, R. G. PLAZA, *Stability of post-fertilization traveling waves.* J. Differ. Equ. **247** (2009), no. 5, 1529-1590. https://doi.org/10.1016/j.jde.2009.05.007
37. R. G. PLAZA, *Multidimensional stability of martensite twins under regular kinetics*, J. Mech. Phys. Solids **56** (2008), no. 4, 1989–2018. https://doi.org/10.1016/j.jmps.2007.11.001
38. H. FREISTÜHLER, R. G. PLAZA, *Normal modes and nonlinear stability behaviour of dynamic phase boundaries in elastic materials,* Arch. Ration. Mech. Anal. **186**, no. 1 (2007), 1–24. https://doi.org/10.1007/s00205-007-0051-y
39. R. G. PLAZA, *A Sobolev-type inequality with applications*, J. Inequal. Pure Appl. Math. **8** (2007), no. 1, art. 2, 13 pp. http://www.emis.de/journals/JIPAM/article815.html?sid=815

PUBLICATIONS (CONTINUED)

40. R. G. PLAZA, P. PADILLA, F. SÁNCHEZ-GARDUÑO, R. A. BARRIO, P. K. MAINI, *The effects of growth and curvature in pattern formation*, J. Dyn. Diff. Equat. **16** (2004), no. 4, 1093-1121. https://doi.org/10.1007/s10884-004-7834-8
41. R. G. PLAZA, K. ZUMBRUN, *An Evans function approach to spectral stability of small-amplitude shock profiles*, Discr. and Cont. Dynam. Syst. **10**, no. 4 (2004), 885-924. https://doi.org/10.3934/dcds.2004.10.885

PROCEEDINGS (REFEREED)

1. C. LATTANZIO, C. MASCIA, R. G. PLAZA, C. SIMEONI, *Numerical computation of the wave speed for hyperbolic reaction-diffusion equations*, in C. Parés *et al.* (eds.), Proceedings of the XVIII International Conference on Hyperbolic Problems: Theory, Numerics, Applications (HYP2022). June 20 - 24, 2022. Málaga, Spain. Hyperbolic Problems: Theory, Numerics, Applications, Volume II, SEMA SIMAI Springer Series 35. Springer Cham, 2024. https://doi.org/10.1007/978-3-031-55264-9_14
2. C. K. R. T. JONES, R. MARANGELL, P. D. MILLER, R. G. PLAZA, *On the spectral and modulational stability of periodic wavetrains for nonlinear Klein-Gordon equations.* Proceedings of the XV International Conference on Hyperbolic Problems: Theory, Numerics, Applications (HYP2014). July 28 - August 1, 2014. IMPA, Rio de Janeiro, Brazil. Bull. Braz. Math. Soc. (N.S.) **47** (2016), no. 2, 417–429. https://doi.org/10.1007/s00574-016-0159-5
3. R. G. PLAZA, *On the stability of degenerate viscous shock profiles*, en F. Ancona, A. Bressan, P. Marcati, A. Marson (eds.), Hyperbolic problems: Theory, Numerics, Applications. Proceedings of the 14th International Conference in Hyperbolic Problems (Padova 2012). AIMS Series on Applied Mathematics Vol. 8, American Institute of Mathematical Sciences, 2014, pp. 857-864. https://www.aimsciences.org/fileAIMS/cms/news/info/HYP2012_Proceedings.pdf
4. H. FREISTÜHLER, R. G. PLAZA, *Normal modes analysis of subsonic phase boundaries in elastic materials*, Proc. of Hyperbolic Problems: Theory, Numerics and Applications (Lyon, 2006), S. Benzoni-Gavage and D. Serre, eds., Springer-Verlag, Berlin, 2007, pp. 841–848. https://doi.org/10.1007/978-3-540-75712-2_87

BOOK CHAPTERS (REFEREED)

1. C. LATTANZIO, C. MASCIA, R. G. PLAZA, C. SIMEONI, *Spectral stability of traveling fronts for nonlinear hyperbolic equations of bistable type*. Accepted for publication in D. Donatelli, C. Simeoni (eds.), Partial Differential Equations: Ambitious Mathematics for Real-Life Applications, SEMA-SEMAI Series, Springer-Verlag.
   Preprint: https://arxiv.org/abs/1802.08750
2. C. LATTANZIO, C. MASCIA, R. G. PLAZA, C. SIMEONI, *Analysis and numerics of the propagation speed for hyperbolic reaction-diffusion models*. Accepted for publication in D. Donatelli, C. Simeoni (eds.), Partial Differential Equations: Ambitious Mathematics for Real-Life Applications, SEMA-SEMAI Series, Springer-Verlag.
   Preprint: https://arxiv.org/abs/2206.09714

PREPRINTS

- A. NAUMKINA, R. G. PLAZA, *Orbital instability of periodic waves for generalized Korteweg-de Vries-Burgers equations with a source*. Preprint, 2024. Submitted to Math. Z. https://arxiv.org/abs/2412.14041
- A. CAPELLA, C. MELCHER, L. MORALES, R. G. PLAZA, *Stability of moving Néel walls in ferromagnetic thin films*. Preprint, 2024. Submitted to J. Nonlinear Sci. https://arxiv.org/abs/2409.04023
- R. G. PLAZA, J. M. VALDOVINOS, *Global decay of perturbations of equilibrium states for one-dimensional heat conducting compressible fluids of Korteweg type*. Preprint, 2023. Submitted to J. Differ. Equ. https://arxiv.org/abs/2307.16300

CITATIONS

Google Scholar Citations Profile: 727; *h*-index: 11.

Scopus Author Profile: 363; *h*-index: 9.

MathSciNet Profile (suscription required): 368.

Total verified citations (excluding self-citations): **547**
Document file: https://mym.iimas.unam.mx/ramon/docs/Citations-RamonPlaza.pdf
Sources: Scopus, ISI Web of Knowledge, MathSciNet, Google Scholar Citations, WoS.

FUNDING

Principal investigator: CONACyT, Program "Ciencia de Frontera". Grant No. CF-2023-G-122.
Co-P.I.: Antonio Capella.
July 2023 - November 2025.
$ 98,000.00 USD (approx.)

Principal investigator: DGAPA-UNAM, Program PAPIIT, Grant IN-104922.
January 2022 - December 2024.
$23,000.00 USD (approx.)

Principal investigator: DGAPA-UNAM, Program PAPIIT, Grant IN-100318.
January 2018 - December 2020.
$15,000.00 USD (approx.)

Principal investigator: DGAPA-UNAM, Program PAPIME. Grant PE-104116.
Co-P.I.: Jorge X. Velasco
January 2016 - December 2017.
$ 16,000.00 USD (approx.)

Principal investigator: DGAPA-UNAM, Program PAPIIT, Grant IN-104814.
January 2014 - December 2016.
$15,000.00 USD (approx.)

Principal investigator: CONACyT - Italian Ministry of Research (MIUR), MAE Program, Grant No. 146529
Co-P.I.: Chiara Simeoni.
January 2011 - December 2013.
$30,000.00 USD (approx.)

Principal investigator: DGAPA-UNAM, Program PAPIIT, Grant IN-109008.
January 2008 - December 2009.
$15,000.00 USD (approx.)

VISITING POSITIONS

Invited professor. Departamento de Matemática y Estadística. Universidade de São Paulo, Brazil. November 4 - 16, 2024. Host: J. Angulo Pava.

Invited professor. Dipartimento di Ingegneria e Scienze dell′Informazione e Matematica, Università degli Studi dell′Aquila, Italia. September 11-15, 2023. Host: C. Lattanzio.

Invited professor. Dipartimento di Ingegneria e Scienze dell′Informazione e Matematica, Università degli Studi dell′Aquila, Italia. October - December, 2017. Hosts: C. Lattanzio, D. Donatelli.

VISITING POSITIONS (CONTINUED)

Visiting fellow. Dipartimento di Matematica 'Guido Castelnuovo'. Universitá di Roma 'La Sapienza'. Roma, Italia. July 17 - 30, 2017. Host: C. Mascia.

Invited professor. Departamento de Matemática y Estadística. Universidade de São Paulo, Brasil. October 1 - 20, 2015. Host: J. Angulo Pava.

Visitor. Department of Mathematical Sciences, University of Bath, United Kingdom. September 4-11, 2014. Host: A. Kyprianou.

Visiting fellow. Dipartimento di Ingegneria e Scienze dell′Informazione e Matematica, Università degli Studi dell′Aquila, Italia. November 5 - 20, 2013. Host: C. Lattanzio.

Invited professor. Dipartimento di Ingegneria e Scienze dell′Informazione e Matematica, Università degli Studi dell′Aquila, Italia. September - December, 2012. Host: C. Lattanzio.

Visiting fellow. Department of Mathematical Sciences, Texas A&M University, College Station, Texas, U.S.A. April 2-7, 2012. Host: P. Howard

Visiting fellow. Dipartimento di Ingegneria e Scienze dell′Informazione e Matematica, Università degli Studi dell′Aquila, Italia. October - November, 2011. Host: C. Simeoni.

Visitor. Departamento de Matemática Aplicada, Universidad Complutense de Madrid, Spain. April 10 - 24, 2010. Hosts: G. Oleaga, J.J.L. Velázquez.

Visitor. Mathematisches Institut, Universität Leipzig, Germany. November 3 - 15, 2009. Hosts: W. König, S. Luckhaus.

Visiting fellow. Department of Mathematics, Indiana University, Bloomington, Indiana, U.S.A. April 5 - 18, 2009. Host: K. Zumbrun.

Visiting fellow. Department of Mathematics, Indiana University, Bloomington, Indiana, U.S.A. April 24 - May 4, 2008. Host: K. Zumbrun.

Visiting fellow. Department of Mathematics, Indiana University, Bloomington, Indiana, U.S.A. April 9 - 18, 2007. Host: K. Zumbrun.

INVITED ADDRESSES

- 6th Workshop on Nonlinear Dispersive Equations. Instituto de Matemática y Estadística, Universidad de São Paulo, Brazil, November 6, 2024.
- Mathematical Trends in Operator Theory, PDE and Mathematical Physics, IIMAS-UNAM, Mexico City. July 23, 2024.
- Seminar on Analysis, Differential Equations and Mathematical Physics. Regional Mathematical Center of the Southern Federal University, Rostov-on-Don, Russian Federation. June 27, 2024. Link to video: here.
- Workshop on Applied Mathematics (online). University of Nottingham, Campus Ningbo, China. November 27, 2023.
- Programa de conferencias "Hablando de Matemáticas", Instituto de Matemáticas, UNAM. September 28, 2023. Link to video: here.
- Dynamics Days Europe 2023 - Università degli Studi di Napoli Federico II, Nápoles, Italy. September 7, 2023.
- Annual Meeting of the Society of Industrial and Applied Mathematics, Mexico Section (MexSIAM), 2023. Instituto Tecnológico Autónomo de México, Mexico City. June 9, 2023.

INVITED ADDRESSES (CONTINUED)

- I Seminario de Física y Matemáticas. Escuela Superior de Matemáticas No. 2, Universidad Autónoma de Guerrero, Guerrero, Mexico. February 23, 2023.
- V Workshop on Nonlinear Dispersive Equations (5th WNDE). Universidade Federal de Minas Gerais, Belo Horizonte, Brasil. November 11, 2022.
- VI Congreso Latinoamericano de Matemáticos (CLAM VI) (Online.) Montevideo, Uruguay. September 16, 2021.
- International Workshop: "New Trends in Nonlinear Diffusion: A bridge between PDEs, Analysis and Geometry (Online) (21w5127)". Casa Matemática Oaxaca. Oaxaca, México. September 9, 2021.
- Coloquio de la Sociedad Matemática Mexicana (online). Mexico City, Mexico. June 10, 2021.
- III Summer School (online), Universidad Estadual de Maringá, Brasil. March 29, 2021.
- XII Americas Conference on Differential Equations and Nonlinear Analysis. CIMAT, Guanajuato, Mexico. December 9 - 13, 2019.
- IV Workshop on Nonlinear Dispersive Equations. Universidad Federal de Rio de Janeiro, Brasil. November 5 - 8, 2019.
- *Plenary talk:* Stability of Nonlinear Waves: Analysis and Applications: A conference in honor of the 60th birthday of Kevin Zumbrun. Institute Henri Poincaré, Paris, France. July 1 - 5, 2019.
- International Workshop: "Mathematical Challenges in the Analysis of Continuum Models for Cancer Growth, Evolution and Therapy (18w5115)". Casa Matemática Oaxaca. Oaxaca, Mexico. November 25 - 30, 2018.
- SIMAI 2018: Congress of the Italian Society of Applied and Industrial Mathematics (SIMAI). "La Sapienza", Universitá di Roma. July 5, 2018.
- *Plenary talk:* V SUMEM Meeting (Seminario Universitario para la Mejora de la Educación Matemática en la UNAM). School of Sciences, UNAM. June 15, 2018.
- International Workshop on "Applied Analysis of Operators, PDEs and Functionals". Bath-UNAM-CIMAT Meeting (BUC). Parque Científico Tecnológico, Mérida, Yucatán, Mexico. April 5-8, 2017.
- The Tenth IMACS International Conference on Nonlinear Evolution Equations and Wave Phenomena: Computation and Theory. Georgia Center for Continuing Education University of Georgia, Athens, Georgia. March 29 - April 1, 2017.
- Dynamics Days Latin America and the Caribbean. Benemérita Universidad Autónoma de Puebla. Puebla, México, October 24 - November 1, 2016.
- The 11th AIMS Conference on Dynamical Systems, Differential Equations and Applications. Orlando, Florida, July 1 -5, 2016.
- *Plenary talk:* Mathematical Biology: A Multidisciplinary Endeavour. Centro Académico y Cultural, UNAM, Campus Juriquilla, Querétaro, Mexico. January 11 - 14, 2016.
- International Meeting in Mathematical Biology. Universidad Nacional de Colombia, Sede Medellín. November 3 - 5, 2015.
- Second Workshop on Nonlinear Dispersive Equations: Celebrating the 70th Anniversary of M. Scialom. IMECC, Universidad de Campinas, Brasil. October 6 - 9, 2015.
- First Joint International Meeting of the Israel Mathematical Union and the Mexican Mathematical Society. Instituto Tecnológico de Oaxaca, Oaxaca, México. September 7 - 11, 2015
- International Workshop on Differential Equations: Asymptotics, Operators, Geometry and Applications. Institute of Engineering, UNAM, November 24-26, 2014.
- XLVII Meeting of the Mexican Mathematical Society. Universidad Juárez del Estado de Durango, October 26 - 31, 2014.
- III Joint Meeting: Mexican Mathematical Society and Royal Spanish Mathematical Society. Universidad Autónoma de Zacatecas, Mexico. September 1-4, 2014.
- IV Latin American Mathematics Conference. Universidad Nacional de Córdoba, Argentina. August 6-10, 2012
- SIAM Conference of Nonlinear Waves and Coherent Structures (NW12). Seattle, Washington. June 13-17, 2012.

INVITED ADDRESSES (CONTINUED)

- IX Americas Conference on Differential Equations. Trujillo, Perú, January 9-14, 2012.
- Workshop on Mathematical Physics: Asymptotics and Applications. S. Dobrokhotov's 60th anniversary. Facultad de Ingeniería, UNAM, México. November 28-30, 2010.
- SIAM Conference of Nonlinear Waves and Coherent Structures (NW10). Philadelphia, PA, August 16-19, 2010.
- VIII Americas Conference on Differential Equations. Pan-American Advanced Studies Institute 2009. Veracruz, México. October 15-23, 2009.
- I Joint Meeting: Sociedad Matemática Mexicana y Real Sociedad Matemática Española. Oaxaca, México, July 22-24, 2009.
- VII Joint Meeting AMS-SMM. Zacatecas, México. May 2007.
- Workshop on Analysis and Numerics of Free Boundary Value Problems. Martin Luthet University, Halle, Germany. February 10-14, 2006.

POSTERS

- D. PERA, C. MÁLAGA, R. G. PLAZA, C. SIMEONI. Poster: *On the efficient numerical simulation of heterogenous anisotropic diffusion models of tumor invasion using GPUs*. PUMPS+AI2018 – Summer School on Programming and Tuning Massively Parallel Systems+Artificial Intelligence, July 2018, Barcelona, Spain.

INVITED COURSES

- Mini-course: *"Evans function methods in the stability analysis of periodic wavetrains"*. Dipartimento di Ingegneria e Scienze dell′Informazione e Matematica, Università degli Studi dell′Aquila, Italia. November 24 and 28, 2017.
  - Lecture 1: *Preliminaries. Floquet-Bloch spectrum. Introduction to Whitham's modulation theory.*
  - Lecture 2: *Modulation theory vs. Evans function techniques for nonlinear Klein-Gordon equations*
- Mini-course: *"Introduction to initial-boundary value problem for hyperbolic systems"*. 1st School on Mathematical Analysis. School of Sciences, Universidad de Colima, México. September 26 - 30, 2016.
- Mini-course: *"Spectral stability of periodic wavetrains"*. Instituto de Matemática y Estadística, Universidad de Sao Paulo, Brasil. Auditorio Antonio Gilioli, Bloco A, October 13, 14 and 16, 2015.
  - Lecture 1: *Preliminaries: Floquet-Bloch spectrum*
  - Lecture 2: *Introduction to modulation theory*
  - Lecture 3: *Evans function techniques*
- Mini-course: *"Asymptotic Methods in Mathematical Biology"*. School on Mathematical Methods in Biology EMMBIO 2015. Centro de Ciencias Matemáticas, UNAM (Campus Morelia). July 27 - August 1, 2015.
- Invited course: *"Applied PDEs"*. M.Sc. Program in Mathematics, MathMods (Erasmus Mundus). University of L′Aquila, Italy. September - December, 2012.

TALKS IN CONFERENCES, SEMINARS AND COLLOQUIA

- Seminar of the Institute of Engineering, UNAM. Mexico City, October 17, 2024. Link to the conference video: here.
- Analysis Seminar. Instituto de Matemáticas, UNAM, Campus Cuernavaca, Mexico. April 26, 2024.
- Seminario di Analisi. Dipartimento di Ingegneria e Scienze dell′Informazione e Matematica, Università degli Studi dell′Aquila, Italia. Septiembre 13, 2023.
- Applied Mathematics Colloquium. IIMAS-UNAM, Mexico. April 13, 2023.
- Nonlinear Differential Equations Seminar. Institute of Mathematics, UNAM. October 20, 2022.
- Annual Meeting of the Society of Industrial and Applied Mathematics, Mexico Section (MexSIAM), 2022. Universidad Autónoma de Coahuila. Saltillo, Coahuila, Mexico. June 7 - 9, 2022.

TALKS IN CONFERENCES, SEMINARS AND COLLOQUIA (CONTINUED)

- Mathematics Seminar, Instituto Tecnológico Autónomo de México, Mexico. October 15, 2021.
- Mathematics Colloquium. Institute of Mathematics, Cuernavaca Unit, UNAM, Mexico. May 12, 2021.
- Online Seminar on Nonlinear Dispersive Differential Equations. Universidad Federal de Rio de Janeiro and IMPA, Brasil. November 25, 2020.
- Operator Theory Analysis and Mathematical Physics 2020. IIMAS, UNAM, Mexico City, Mexico. January 8 - 14, 2020.
- Nonlinear Differential Equations Seminar. Institute of Mathematics, UNAM. May 22, 2019.
- Sympsium on Scientific Computing. IIMAS, UNAM. September 20, 2018.
- Probability and Stochastic Processes Seminar. Institute of Mathematics, UNAM. August 29, 2018.
- Applied Mathematics and Biomathematics Seminar. Institute of Mathematics, UNAM, Juriquilla Campus. June 8, 2018.
- Analysis Seminar. Institute of Mathematics, UNAM, Cuernavaca Campus. April 26, 2018.
- Nonlinear Differential Equations Seminar. Institute of Mathematics, UNAM. March 6, 2018.
- Seminario di Analisi. Dipartimento di Ingegneria e Scienze dell′Informazione e Matematica, Università degli Studi dell′Aquila, Italy. November 29, 2017
- Theoretical Biology Seminar. Department of Mathematics, School of Sciences, UNAM. October 5, 2017.
- Seminario di Analisi. Dipartimento di Matematica, Universitá di Roma, 'La Sapienza', Italia. July 18, 2017.
- 'Tlahuilcalli'Colloquium, Universidad Autónoma Metropolitana, Azcapotzalco, Mexico. June 27, 2017.
- "Jesús Reyes Corona" Seminar, Physics Institute, Benemérita Universidad Autónoma de Puebla, Mexico. May 26, 2017.
- Mathematics Colloquium. Institute of Mathematics, UNAM. May 17, 2016.
- Mathematics Seminar. Institute of Mathematics, UNAM, Campus Juriquilla. December 7, 2015.
- Seminar on Nonlinear Differential Equations. Institute of Mathematics, UNAM. December 3, 2015.
- Mathematics Colloquium. Center of Mathematical Sciences (Campus Morelia), UNAM. May 29, 2015
- Mathematics Colloquium. Institute of Mathematics (Cuernavaca Unit), UNAM. March 4, 2015.
- X Americas Conference on Differential Equations and Nonlinear Analysis. University of Buenos Aires, Argentina. February 9 to 20, 2015.
- Mathematics Seminar, Instituto Tecnológico Autónomo de México, Mexico. January 23, 2015.
- XV International Conference on Hyperbolic Problems: Theory, Numerics, Applications (HYP2014). IMPA, Rio de Janeiro, Brazil. July 28 - August 1, 2014.
- "DiferenciHable"Seminar. School of Sciences, UNAM, Mexico. March 13, 2014.
- Applied Mathematics Seminar, Department of Information Engineering, Computer Science and Mathematics, University of LÁquila, Italy. November 27, 2013.
- Differential Equations and Geometry Seminar. Universidad Autónoma Metropolitana - Iztapalapa. México, May 30, 2013.
- IX Conference on Analysis and Mathematical Physics. Universidad Autónoma del Estado de Hidalgo. Pachuca, Hidalgo, January 14-16, 2013.
- Applied Mathematics Seminar. Department of Pure and Applied Mathematics, University of L′Aquila, Italy. November 7, 2012.

TALKS IN CONFERENCES, SEMINARS AND COLLOQUIA (CONTINUED)

- XIV International Conference on Hyperbolic Problems: Theory, Numerics, Applications (HYP2012). University of Padova, Italy. June 25-29, 2012.
- Applied Mathematics Seminar. Department of Mathematics, Texas A&M University. April 2, 2012.
- Mathematics Colloquium. Mathematics Institute, UNAM, México. February 21, 2012.
- Applied Mathematics Seminar. Department of Pure and Applied Mathematics, University of L′Aquila, Italy. November 2, 2011.
- Applied Mathematics Seminar. Universidad Complutense de Madrid, Spain. April 13, 2010.
- Applied Mathematics Colloquium. IIMAS-UNAM, México. March 3, 2010.
- Applied Mathematics Colloquium. IIMAS-UNAM, México. February 24, 2010.
- Oberseminar. Max-Planck-Institute for Mathematics in the Sciences, Leipzig, Germany. November 19, 2009.
- Differential Equations Seminar. Mathematics Institute, UNAM, México. September 10, 2009.
- Physics Department Seminar, School of Sciences, UNAM, México. May 13, 2009.
- Interdisciplinary Seminar, Medicine School, UNAM, México. February 22, 2009.
- Mathematics Seminar. Instituto Tecnológico Autónomo de México. August 10, 2008.
- Twelfth International Conference on Hyperbolic Problems: Theory, Numerics, Applications (HYP2008). Center for Scientific Computation and Mathematical Modeling (CSCAMM) and Department of Mathematics, University of Maryland. College Park, Maryland. June 9-13, 2008.
- PDE Seminar, Indiana University. Bloomington, Indiana. May 15, 2008.
- Applied Mathematics Colloquium. IIMAS-UNAM, México. November 14, 2007.
- PDE Seminar, Universidad de Indiana. Bloomington, Indiana. April 8, 2007.
- Eleventh International Conference on Hyperbolic Problems: Theory, Numerics, Applications (HYP2006). École Normale Supérieure de Lyon, France. July 17-21, 2006.
- Microstrukturen Seminar. Max-Planck-Institute for Mathematics in the Sciences, Leipzig, Germany. January 5, 2006.
- Analysis Seminar. Mathematics Institute, University of Leipzig, Germany. October 13, 2004.
- Applied Mathematics Colloquium. IIMAS-UNAM, México. September 16, 2004.
- Microstrukturen Seminar. Max-Planck-Institute for Mathematics in the Sciences, Leipzig, Germany. January 18, 2004.

TEACHING EXPERIENCE

Graduate Courses:

- *Sobolev Spaces and Elliptic Partial Differential Equations.*
  Graduate Program in Mathematical Sciences, UNAM. 2024-2 Term.
- *Partial Differential Equations.*
  Graduate Program in Mathematical Sciences, UNAM. 2024-1 Term.
- *Stochastic Partial Differential Equations.*
  Graduate Program in Mathematical Sciences, UNAM. 2023-1 Term.
- *Hyperbolic Systems of Conservation Laws*.
  Graduate Program in Mathematical Sciences, UNAM. 2022-2 Term.
- *Semigroups and Partial Diferential Equations of Evolution*.
  Graduate Program in Mathematical Sciences, UNAM. 2022-1 Term.
- *Ordinary Differential Equations.*
  Graduate Program in Mathematical Sciences, UNAM. 2021-2 Term.
- *Sobolev Spaces and Elliptic Partial Differential Equations.*
  Graduate Program in Mathematical Sciences, UNAM. 2021-2 Term.
- *Partial Differential Equations.*
  Graduate Program in Mathematical Sciences, UNAM. 2021-1 Term.
- *Nonlinear Hyperbolic Partial Differential Equations.*
  Graduate Program in Mathematical Sciences, UNAM. 2020-2 Term.

TEACHING EXPERIENCE (CONTINUED)

Graduate Courses:

- *Functional Analysis Methods in Partial Differential Equatiops*.
  Graduate Program in Mathematical Sciences, UNAM. 2020-1 Term.
- *Partial Differential Equations.*
  Graduate Program in Mathematical Sciences, UNAM. 2019-2 Term.
- *Partial Differential Equations.*
  Graduate Program in Mathematical Sciences, UNAM. 2017-2 Term.
- *Hilbert Space Methods in Partial Differential Equatiops*.
  Graduate Program in Mathematical Sciences, UNAM. 2017-1 Term.
- *Partial Differential Equations.*
  Graduate Program in Mathematical Sciences, UNAM. 2016-2 Term.
- *Hyperbolic Systems of Conservation Laws*.
  Graduate Program in Mathematical Sciences, UNAM. 2015-2 Term.
- *Partial Differential Equations.*
  Graduate Program in Mathematical Sciences, UNAM. 2015-1 Term.
- *Hyperbolic Systems of Conservation Laws.*
  Graduate Program in Mathematical Sciences, UNAM. 2014-1 Term.
- *Partial Differential Equations.*
  Graduate Program in Mathematical Sciences, UNAM. 2013-2 Term.
- *Applied Partial Differential Equations.*
  Master's Program in Mathematical Engineering - MathMods (Erasmus Mundus).
  University of L′Aquila, Italy. September - December, 2012.
- *Introduction to Hyperbolic Systems of Conservation Laws.*
  Graduate Program in Mathematical Sciences, UNAM. 2011-2 Term .
- *Hyperbolic Systems of Conservation Laws.*
  Graduate Program in Mathematical Sciences, UNAM. 2010-1 Term.

Undergraduate Courses:

- *Mathematical Biology I.*
  School of Sciences, UNAM. 2024-2 Term.
- *Ordinary Differential Equations I.*
  School of Sciences, UNAM. 2022-1 Term.
- *Mathematical Biology I.*
  School of Sciences, UNAM. 2019-1 Term.
- *Linear Algebra I.*
  School of Sciences, UNAM. 2019-1 Term.
- *Partial Differential Equations II.*
  School of Sciences, UNAM. 2015-1 Term.
- *Partial Differential Equations I.*
  School of Sciences, UNAM. 2014-2 Term.
- *Partial Differential Equations I.*
  School of Sciences, UNAM. 2012-2 Term.
- *Ordinary Differential Equations I.*
  School of Sciences, UNAM. 2012-1 Term.
- *Partial Differential Equations I.*
  School of Sciences, UNAM. 2010-2 Term.
- *Ordinary Differential Equations I.*
  School of Sciences, UNAM. 2009-2 Term.
- *Partial Differential Equations II.*
  School of Sciences, UNAM. 2008-2 Term.
- *Conservation Laws Seminar.* (with H. Freistühler.)
  University of Leipzig, Germany. Spring term 2006.

TEACHING EXPERIENCE (CONTINUED)

Undergraduate Courses:

- *Complex Analysis.* (with H. Freistühler.)
  University of Leipzig, Germany. Summer term 2006.
- *Differential and Integral Calculus II.* (with A. Schüler.)
  University of Leipzig, Germany. Fall term 2005.
- *Ordinary Differential Equations.* (with W. König.)
  University of Leipzig, Germany. Fall term 2005.
- *Discrete Mathematics.*
  Courant Institute, New York University. Summer term 2003.
- *Discrete Mathematics.*
  Fordham University, New York. Fall term 2012.
- *Business Calculus.*
  Fordham University, New York. Fall term 2012.
- *Differential and Integral Calculus III.*
  Courant Institute, New York University. Fall term 2001.
- *Business Calculus.*
  Courant Institute, New York University. Spring term 2000.

POST-DOCTORAL SUPERVISION

- Dr. Fabio Andrés Vallejo Narváez (Ph.D.: UNAM, 2023)
  February 2024 - November 2026.
- Dr. Felipe Angeles García (Ph.D.: UNAM, 2022)
  September 2023 - November 2023.
  September 2024 - January 2025.
- Dr. Lauro Morales Montesinos (Ph.D.: UNAM, 2022)
  October 2022 - September 2025.
- Dr. Delyan Zhelyazov (Ph.D.: Gran Sasso Science Institute/U. de L′Aquila, 2018)
  September 2021 - August 2023.
- Dr. César Adolfo Hernández Melo (Ph.D.: U. de Sao Paulo, 2011)
  August 2018 - July 2019
- Dr. Luis Fernando López Ríos (Ph.D.: U. de Chile/U. de Aix-Marseille, 2014)
  October 2017 - September 2019

THESES SUPERVISED

Ph.D.:

1. Fabio Andrés Vallejo Narváez.
   Title: *Kreiss-Métivier-Lopatinski theory for initial-boundary value problems for hyperbolic systems in several space dimensions and applications to seismic waves*.
   Graduate Program in Mathematical Sciences, UNAM.
   Graduation date: January 27, 2023.
2. Enrique Álvarez del Castillo de Pina.
   Title: *Spectral stability analysis of periodic traveling wave solutions for Burgers-Fisher equation and scalar viscous balance laws*.
   Graduate Program in Mathematical Sciences, UNAM.
   Graduation date: January 31, 2022.
3. Felipe Angeles García.
   Title: *Local existence for a partially hyperbolic-parabolic system of quasilinear equations through a non-contractive fixed point argument*.
   Graduate Program in Mathematical Sciences, UNAM.
   Graduation date: January 14, 2022.
4. Juan Francisco Leyva Bonilla
   Title: *Continuous models for bacterial aggregation with chemotaxis and non-linear degenerate diffusion: modelling, numerical simulations, and analysis of travelling fronts*.
   Graduate Program in Mathematical Sciences, UNAM.
   Graduation date: October 17, 2017.

THESES SUPERVISED (CONTINUED)

M. Sc.:

1. Luis Eduardo Ibáñez Pérez
   Title: *Dissipative structure of a one-dimensional quantum hydrodynamics system with non-linear viscosity through the genuine coupling condition.*
   Graduate Program in Mathematical Sciences, UNAM.
   Graduation date: August 15, 2023.
2. Ricardo Yadel Murillo Pérez
   Title: *Bifurcation and dynamics in hyperbolic Burgers-Fisher equation.*
   Graduate Program in Mathematical Sciences, UNAM.
   Graduation date: August 31, 2021.
3. José Manuel Valdovinos Barrera
   Title: *Well-posedness and dissipative structure of the one-dimensional system for compressible isothermal fluids of Korteweg type*.
   Graduate Program in Mathematical Sciences, UNAM.
   Graduation date: December 10, 2020.
4. Luis Alejandro Rosas Martínez
   Title: *Existence of non-negative weak solutions to a reaction-diffusion-chemotaxis system with a cross-diffusion term.*
   Graduate Program in Mathematical Sciences, UNAM.
   Graduation date: October 15, 2020.
5. Isai Padilla Bello.
   Title: *Mathematical modeling of the paradoxical tumour growth using cancer stem cells.*
   Graduate Program in Mathematical Sciences, UNAM.
   Graduation date: February 10, 2020.
6. Felipe Ángeles García.
   Title: *Dissipative structure of a viscous system of conservation laws.*
   Graduate Program in Mathematical Sciences, UNAM.
   Graduation date: November 4, 2016.
7. José Alejandro Butanda Mejía.
   Title: *Spectral methods in the stability of traveling fronts for reaction-diffusion equations.*
   Graduate Program in Mathematical Sciences, UNAM.
   Graduation date: June 3, 2016.
8. Ignacio Pérez Pérez.
   Title: *Multidimensional stability for phase transitions.*
   Graduate Program in Mathematical Sciences, UNAM.
   Graduation date: March 14, 2012.
9. Juan Francisco Leyva Bonilla.
   Title: *Admissibility criteria for weak solutions to the Lighthill-Whitham traffic model.*
   Graduate Program in Mathematical Sciences, UNAM.
   Graduation date: February 10, 2011.

B. Sc.:

1. Eduardo Parra García.
   Title: *C_0-semigroups for hyperbolic port-Hamiltonian systems and their applications.*
   School of Sciences, UNAM.
   Graduation date: September 25, 2018.
2. Edgar Itamar Ávalos Almanza.
   Title: *Existence of periodic planar stationary waves in viscoelastic materials with stress-gradient effect.*
   School of Sciences, UNAM.
   Graduation date: April 21, 2017.

THESES SUPERVISED (CONTINUED)

B. Sc.:

3. Karina Islas Ríos.
   Title: *Mathematical modeling of chemotaxis and existence of traveling wave solutions.*
   School of Sciences, UNAM.
   Graduation date: April 8, 2015.
4. Felipe Angeles García.
   Title: *Viscous shock profiles for the compressible Navier-Stokes equations.*
   School of Sciences, UNAM.
   Graduation date: November, 20, 2014.
5. Mónica Romero López.
   Title: *Study of a mathematical model for anti-angiogenesis in secondary tumors*
   School of Sciences, UNAM.
   Graduation date: August 11, 2010.

THESES CURRENTLY UNDER SUPERVISION

Ph. D.:

- José Manuel Valdovinos Barrera
  January 2021 - date.
- Anna Naumkina
  September 2023 - date.
- Luis Fernando Flores Tiburcio
  September 2024 - date.
- Abraham Quiles Sánchez.
  January 2025 - date.

M. Sc.:

- Miguel Ángel Sánchez Alcántara.
  September 2024 - date.

PROFESSIONAL MEMBERSHIPS

American Mathematical Society, Society for Industrial and Applied Mathematics, Sociedad Matemática Mexicana.

EDITORIAL ACTIVITIES

Editor-in-chief, *Boletín de la Sociedad Matemática Mexicana*, Birkhäuser-Verlag.
May 2017 - date.

Associate Editor, *Acta Applicandae Mathematicae*, Springer-Verlag.
January 2015 - date.

Peer referee for: *Advances in Difference Equations*, *AIMS Mathematics*, *Applied Mathematics Letters*, *Archives of Mechanics*, *Boletín de la Sociedad Matemática Mexicana*, *Chaos, Solitons & Fractals*, *Communications in Mathematical Physics*, *Heliyon (Mathematics)*, *Indiana University Mathematics Journal*, *International Journal of Biomathematics*, *International Journal of Communication Systems*, *International Journal of Dynamical Systems and Differential Equations*, *International Journal of Nonlinear Mechanics*, *Journal of Mathematical Biology*, *Journal of Mathematical Physics*, *Journal of Differential Equations*, *Journal of Mathematical Analysis and Applications*, *Journal of Nonlinear Science*, *Journal of Partial Differential Equations*, *Journal of Theoretical Biology*, *Mathematical Biosciences*, *Mathematical Medicine and Biology*, *Mathematical Modelling of Natural Phenomena*, *Meccanica*, *Nonlinear Analysis: Theory, Methods and Applications*, *Nonlinearity*, *Physica D: Nonlinear Phenomena*, *PLOS One*, *Qualitative Theory of Dynamical Systems*, *Scientific African*, *SIAM Journal of Mathematical Analysis and Applications*, *Wave Motion*.

INSTITUTIONAL SERVICE

Department Chair, Mathematics and Mechanics, IIMAS, UNAM.
October 2021 - date.

External Quality Assurance Board of InterMaths. University of L′Aquila, Italy.
January 2023 - date.

Research Projects Evaluation Committee. Programa de Apoyo a Proyectos de Investigación e Innovación Tecnológica (PAPIIT) de la Dirección General de Asuntos del Personal Académico (DGAPA), UNAM.
January 2021 - date.

Coordinator of the Area of Differential Equations. Graduate Program in Mathematics, UNAM.
January 2021 - date.

Evaluation Committee for the Institute of Mathematics. Programa de Primas al Desempeño del Personal Académico de Tiempo Completo (PRIDE) de la Dirección General de Asuntos del Personal Académico (DGAPA), UNAM.
September 2018 - December 2021.

Technical Counselor. University Office of Scientific Research, UNAM.
January 2016 - September 2020.

Coordinator of the Applied Mathematics Colloquium, IIMAS-UNAM.
January 2011 - December 2015.

SYNERGIC ACTIVITIES

Organizer of mini-symposia and special sessions at large meetings. Most recently:

- Special session: *Trends in nonlinear dispersive equations and related topics*. Co-organizers: Felipe Linares (IMPA, Brazil), Claudio Muñoz (Univ. of Chile), Jaime Angulo (Univ. of São Paulo, Brazil). VII CLAM (Congreso Latinoamericano y del Caribe de Matemática), Jõao Pessoa, Paraíba, Brazil. August 26 - 30, 2024.
- Mini-symposium: *Stability and metastability of coherent structures in nonlinear science*. Co-organizer: Raffaele Folino (IIMAS, UNAM). XLIII Dynamics Days Europe 2023. Università degli Studi di Napoli Federico II, Naples, Italy. September 3 - 8, 2023.
- Mini-symposium: *Ecuaciones Diferenciales Parciales No Lineales: Análisis, Numérico y Aplicaciones*. Co-organizers: Luis F. López Ríos, Raffaele Folino (IIMAS, UNAM). Annual Meeting of the Society of Industrial and Applied Mathematics, Mexico Section (Mex-SIAM), 2023. ITAM, Mexico City, Mexico. June 7 - 9, 2023.
- International Workshop: *Mathematical modeling for epidemiology: analysis, simulation and forecasting*. Fondazione C.I.M.E. "Roberto Conti". Co-organizers: Corrado Mascia (Univ. Roma "La Sapienza"), Chiara Simeoni (Lab. Math J.A. Dieudonné UMR, Nice), Andrea Pugliese (Univ. Trento). Cetraro (Cosenza), Italy. September 5 - 9, 2022.
- Special session: *Conservation Laws and Hyperbolic PDEs*. XII Americas Conference on Differential Equations and Nonlinear Analysis. CIMAT, Guanajuato, Mexico. December 9 - 13, 2019.
- International Workshop: *Geometrical Methods, non Self-Adjoint Spectral Problems, and Stability of Periodic Structures"* (17w5044), Casa Matemática Oaxaca del BANFF Research International Station, Canada. Co-organizers: Peter D. Miller (Univ. of Michigan), Jared Bronski (Univ. of Illinois, Urbana-Champaign). Oaxaca, Mexico. June 18 - 23, 2017.

OTHER

Fluent in Spanish, Italian and German.

Programming experience in C, C++, Fortran, Python and CUDA. Proficient in the use of MATLAB, Mathematica and Maple, and the standard packages for teaching/editing Mathematics.